

CIS3350.01

Location Analytics

Dallas Venegas

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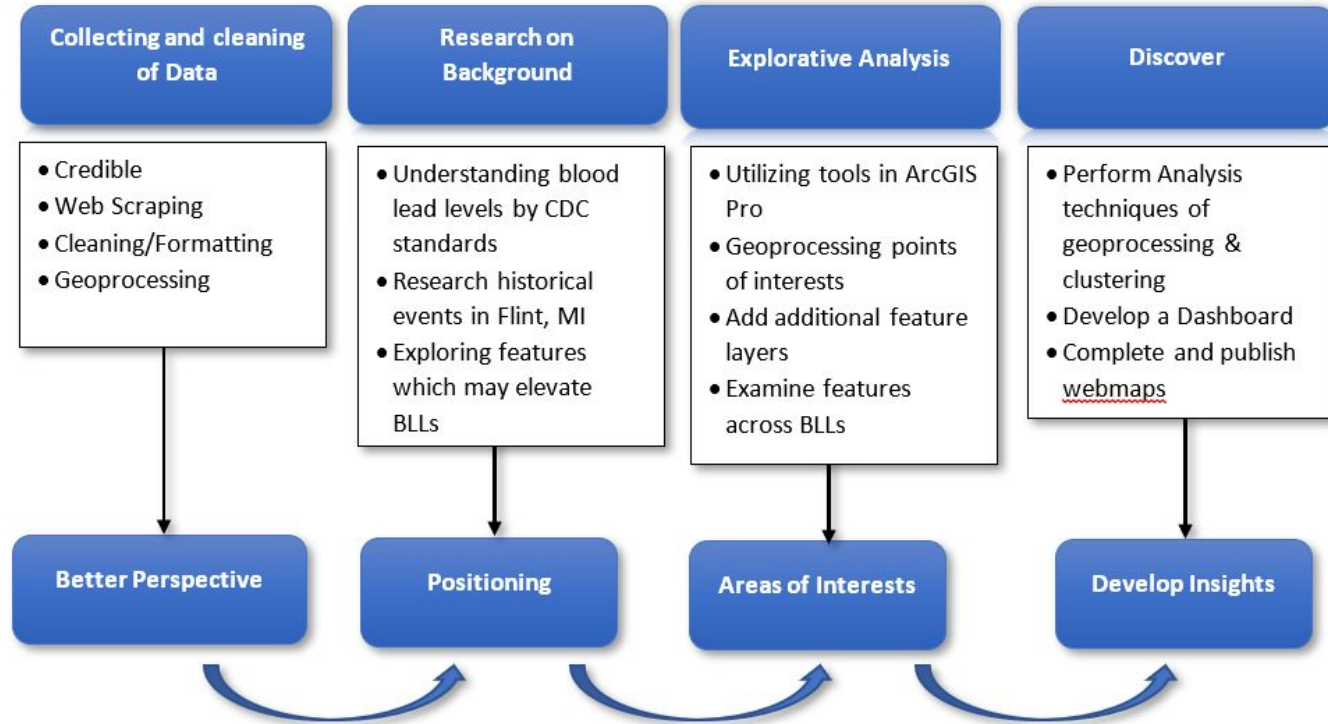
Rahim Rashid

William Vong

Topics Discussed

- Problem Statement - Ray
 - Overall Scope of the project
- Research Question - Dallas
- Methodology FlowChart - Dallas
- Background Research - Dallas
- Spatial Data Source - Jacob
 - Data Cleaning and Extraction - Jacob
 - Geoprocessing - Jacob
- Spatial Analysis Method - Will
- Results - Will
- Conclusion - Ray

Methodology Flow Chart



Background Research

- Flint Michigan - 2014
- 9,000 Children Supplied with Lead-contaminated water
- Crisis began 18 months before discovered



Problem Statement

California		Percent		
Age Group	Less than 4.5 µg/dL	4.5 to 9.49 µg/dL	9.5 µg/dL or Higher	
Ages 0-5	98.5%	1.2%	0.3%	
Ages 6-20	97.5%	2.1%	0.5%	
Total for Ages 20 and Under	98.4%	1.3%	0.3%	



Spatial Data Source - Data Extraction and Cleaning

```
#url List
url = 'https://www.cdph.ca.gov/Programs/CCDC/PHP/DEODC/CLPPB/Pages/BLLMapsTables2019.aspx#'

r = requests.get(url)
df_list = pd.read_html(r.text)
```

```
#iterate through items
for x in range(len(df_list)):
    display(df_list[x])
```

	Local Health Jurisdiction	Age Group (Years)	Blood Lead Level (BLL) <4.5 n	BLL <4.5 % (row)	BLL ≥4.5 to <9.5 n	BLL ≥4.5 to <9.5 % (row)	BLL ≥9.5 n	BLL ≥9.5 % (row)	Totals
0	Alameda	Age < 6	16176	98.16%	229	1.39%	74	0.45%	16479
1	NaN	Age 6 to 21	2549	97.59%	49	1.88%	14	0.54%	2612
2	NaN	Local Total age < 21	18725	98.08%	278	1.46%	88	0.46%	19091
3	Alpine	Age < 6	Suppressed	Suppressed	Suppressed	Suppressed	Suppressed	Suppressed	Suppressed
4	NaN	Age 6 to 21	Suppressed	Suppressed	Suppressed	Suppressed	Suppressed	Suppressed	Suppressed
...
184	NaN	Age 6 to 21	19	100.00%	--	--	--	--	19
185	NaN	Local Total age < 21	80	100.00%	--	--	--	--	80
186	California Totals	Age < 6	467693	98.80%	4575	0.97%	1128	0.24%	473396
187	NaN	Age 6 to 21	47884	97.54%	948	1.93%	262	0.53%	49094
188	NaN	Local Total age < 21	515577	98.68%	5523	1.06%	1390	0.27%	522490

Spatial Data Source - GeoCoding

```
#add state for accurate geococdding
```

```
df['State'] = 'California'
```

```
#check columns
```

```
df.columns
```

```
Index(['Local Health Jurisdiction', 'Age Group (Years)',  
      'Blood Lead Level (BLL) <4.5 n', 'BLL <4.5 % (row)',  
      'BLL≥4.5 to <9.5 n', 'BLL ≥4.5 to <9.5 % (row)', 'BLL≥9.5 n',  
      'BLL ≥9.5 %(row)', 'Totals', 'State'],  
      dtype='object')
```

```
#fills nan values in county column with the front value
```

```
df['Local Health Jurisdiction'] = df['Local Health Jurisdiction'].replace(np.nan, method='ffill')
```

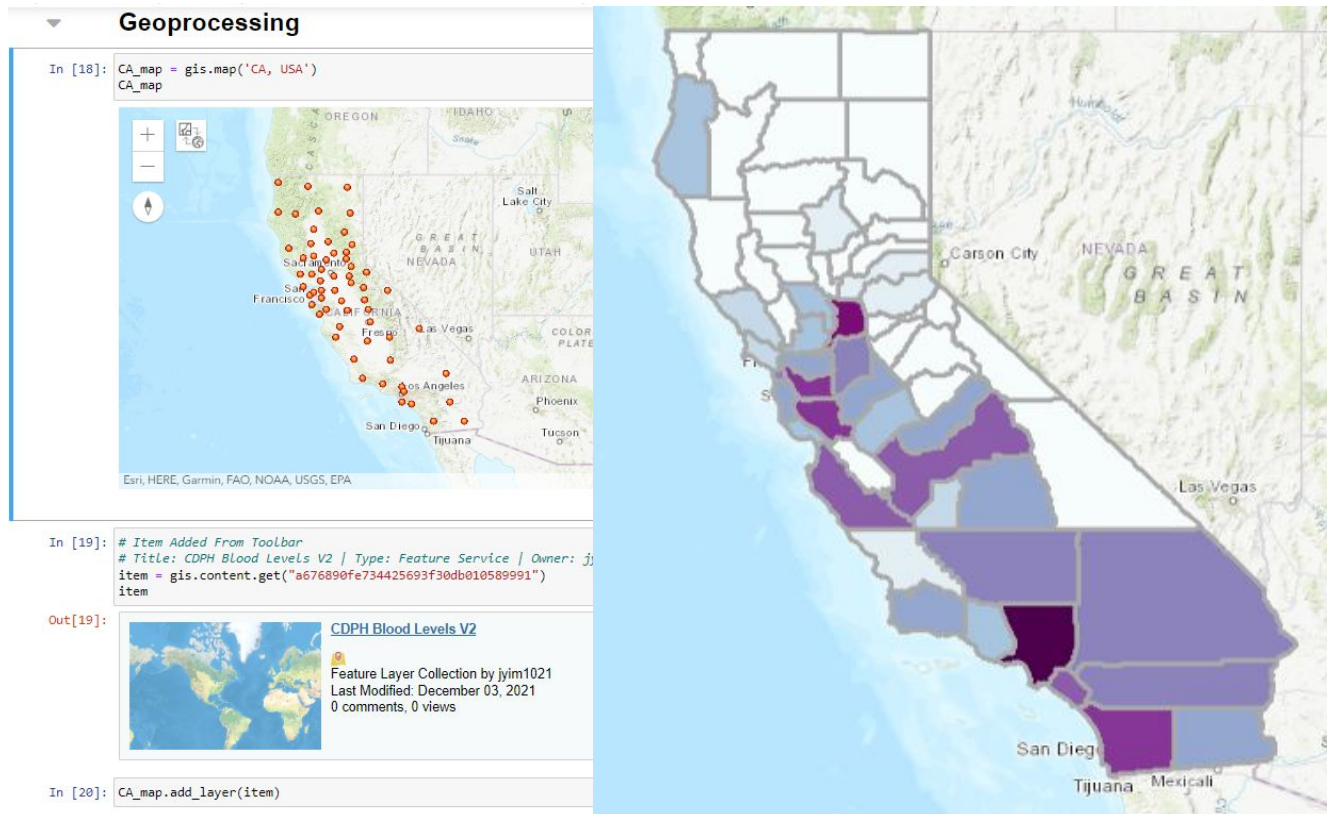
```
#display dataframe
```

```
display(df.head(), df.tail())
```

	Local Health Jurisdiction	Age Group (Years)	Blood Lead Level (BLL) <4.5 n	BLL <4.5 % (row)	BLL≥4.5 to <9.5 n	BLL ≥4.5 to <9.5 % (row)	BLL≥9.5 n	BLL ≥9.5 %(row)	Totals	State
0	Alameda	Age < 6	16176	98.16%	229	1.39%	74	0.45%	16479	California
1	Alameda	Age 6 to 21	2549	97.59%	49	1.88%	14	0.54%	2612	California
2	Alameda	Local Total age < 21	18725	98.08%	278	1.46%	88	0.46%	19091	California
3	Alpine	Age < 6	NaN	NaN	NaN	NaN	NaN	NaN	NaN	California
4	Alpine	Age 6 to 21	NaN	NaN	NaN	NaN	NaN	NaN	NaN	California

	Local Health Jurisdiction	Age Group (Years)	Blood Lead Level (BLL) <4.5 n	BLL <4.5 % (row)	BLL≥4.5 to <9.5 n	BLL ≥4.5 to <9.5 % (row)	BLL≥9.5 n	BLL ≥9.5 %(row)	Totals	State
184	CLPPB	Age 6 to 21	19	100.00%	NaN	NaN	NaN	NaN	19	California
185	CLPPB	Local Total age < 21	80	100.00%	NaN	NaN	NaN	NaN	80	California
186	California Totals	Age < 6	467693	98.80%	4575	0.97%	1128	0.24%	473396	California
187	California Totals	Age 6 to 21	47884	97.54%	948	1.93%	262	0.53%	49094	California
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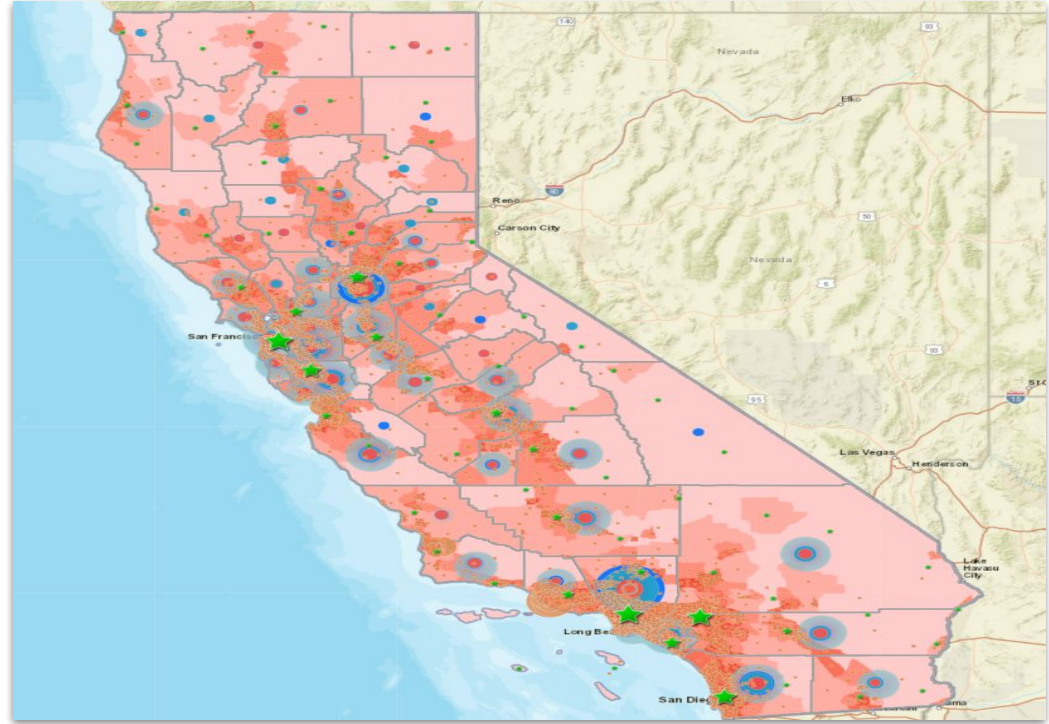
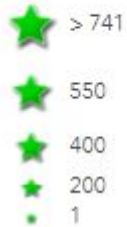
Spatial Data Source - Geoprocessing



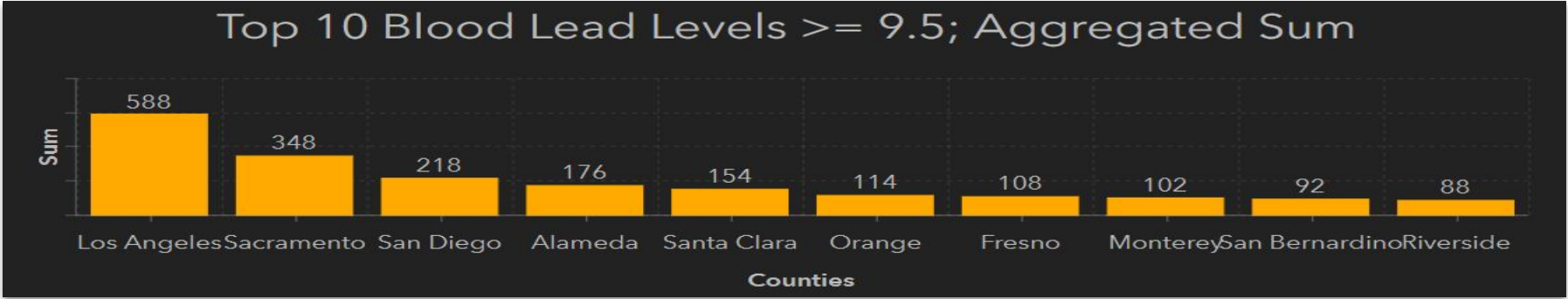
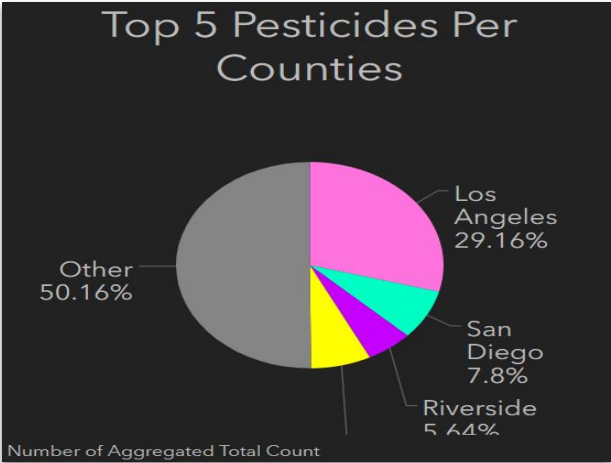
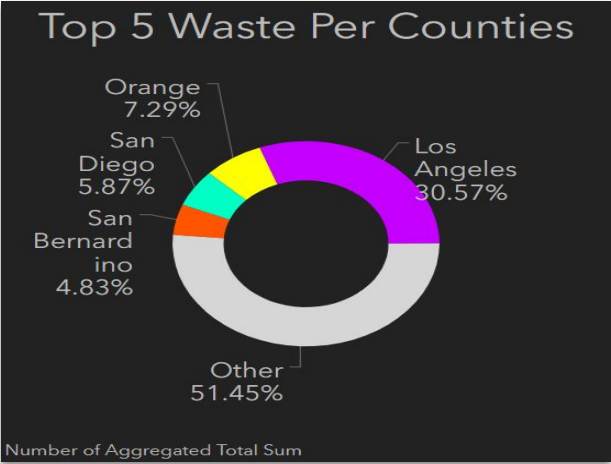
Spatial Analysis Method

Cluster Centroids

Number of features



Results



The image features a central glass filled with a blue liquid. A stream of the same liquid is pouring into the glass from above. Inside the glass, there is a white skull and crossbones symbol. The background is a dark blue gradient with wavy lines, and it is populated with several light blue virus-like icons (spheres with spikes) and small circular bubbles. The text "THANK YOU!" is written in a large, white, sans-serif font across the middle of the image.

THANK YOU!

THANK YOU!